Montana State Library

STATE LABORATORIES

1972

REPORT NO. 52
To the 43rd Legislative Assembly

MONTANA LEGISLATIVE COUNCIL
State Capitol
Helena, Montana

STATE LABORATORIES

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RECOMMENDATIONS

The Montana Legislative Council recommends:

1. *That the Livestock Sanitary Board impose a selective fee for tests performed by the Diagnostic Laboratory on animals not subject to tax assessment as commercial livestock.*

2. *That Montana law requiring grain protein testing and USDA grading at the Bozeman Grain Lab be amended so as to make the Montana State Grain Inspection Laboratory the only official laboratory authorized to perform these functions.*

3. *That laboratory administrators in the Department of Agriculture and the Agricultural Experiment Station conduct a detailed review of the operating expenses of each laboratory under their control and make adjustments to laboratory fee schedules where necessary to make such fees reflective of all direct and indirect costs incurred in providing the services for which each fee is charged.*

4. *That the Department of Institutions investigate means of consolidating clinical laboratory functions between the Galen and Warm Springs Hospitals and submit their findings to the 43rd Montana Legislative Assembly.*

5. *That the Laboratory Division of the Department of Health and Environmental Sciences be relocated on the campus of one of the units of the Montana University System.*

   That if such a relocation is effected, the Criminal Investigation Laboratory be integrated into any new facility acquired to house the Laboratory Division.

INTRODUCTION

Purpose of Study

Senate Joint Resolution No. 24, passed by the 41st Montana Legislative Assembly, directed the Legislative Council to study and evaluate the various state agency and university laboratories, their functions, responsibilities, services and degree of efficiency. The clauses preceding this directive noted the importance of the laboratory function to the work of state regulatory agencies and the inefficiencies arising when expensive laboratory equipment becomes obsolete or when agency activities overlap. The resolution asked that the Legislative Council look for areas of duplication in state laboratory effort or places where common laboratory activities could be consolidated.

Study Procedures

Due to the highly technical nature of this study, the Council felt it necessary to utilize the services of a consultant who was versed in the scientific aspects of laboratory activity. Several professionals were interviewed, and the study group subsequently engaged Dr. Ralph J. Fessenden, Chairman of the Department of Chemistry at the University of Montana, Missoula. Dr. Fessenden met with the study group to discuss alternative approaches to the study. The procedure thus decided upon was as follows:

Step One - Identification of operating laboratories within the state. All state agencies were contacted by phone in order to determine which agencies presently maintained laboratory operations or were contemplating laboratory activity in the future. A crosscheck of the information derived in this manner was made through correspondence with laboratory equipment vendors and the State Purchasing Bureau. Federal, municipal and private laboratories were identified during the initial stage of the study in order to locate areas where state agency laboratory activities could be more efficiently handled through private or federally-funded facilities.

Step Two - Classification of laboratories. Following the identification of operating laboratories, each unit was categorized according to its primary function. Generally, all laboratories fell within the following broad categories:

1. Education
2. Health and Medical
3. Testing and General Analytical
4. Regulatory
5. Miscellaneous

Step Three - Analysis of selected state laboratories. Laboratories from each functional group were selected based on their administrative relationship to state agencies or the extent of their

dependency upon legislative appropriation for operating funds. These laboratories were reviewed in depth by the study group with the aid of the laboratory consultant (see Scope of Study).

Scope of Study

The initial canvass of laboratories disclosed that from 1,000 to 1,300 facilities were currently operating within the state. Figure 1 shows an approximate breakdown of laboratory facilities by function.

Of the estimated 1,217 laboratories shown in Figure 1, 1,072 or 86% are operated in conjunction with an academic institution. The bulk of laboratories in this category are classrooms equipped for lab work which are used either for teaching or research purposes, or for some combination of these activities.

Another major grouping of laboratories was found to include private clinical facilities located within private or community hospitals or within various medical clinics (approximately 121 laboratories).

Due to a shortage of time and funds available for this study, the Council limited its scope of investigation to 13 agency laboratory units (see Table 1). These 13 facilities were determined to be the major state operated laboratories from the standpoint of their purposes and funding. Most laboratories within this group were created either directly or indirectly by legislative action and the remainder are ancillary to programs of state departments.

The Council's laboratory consultant made one or more on-site inspections of each of the 13 facilities selected for detailed study. Several of the larger laboratories in this group were inspected either individually or collectively by members of the subcommittee.

In addition to visually inspecting each laboratory, the consultant filled out a detailed questionnaire through conversation with laboratory supervisors and using available published data. This questionnaire, identical in format for each lab studied, consisted of 90 objective-type questions covering the following laboratory operations:

1. Location and organization
2. Staffing and administration
3. Activities, reporting and procedures
4. Funding and fee schedules

After the completed questionnaires had been approved by the respective laboratory administrators, each was reviewed in detail by the study group. This report contains capsule descriptions of each laboratory studied in detail along with relevant Council conclusions and recommendations.

FIGURE 1

BREAKDOWN OF TOTAL OPERATING LABORATORIES BY FUNCTION

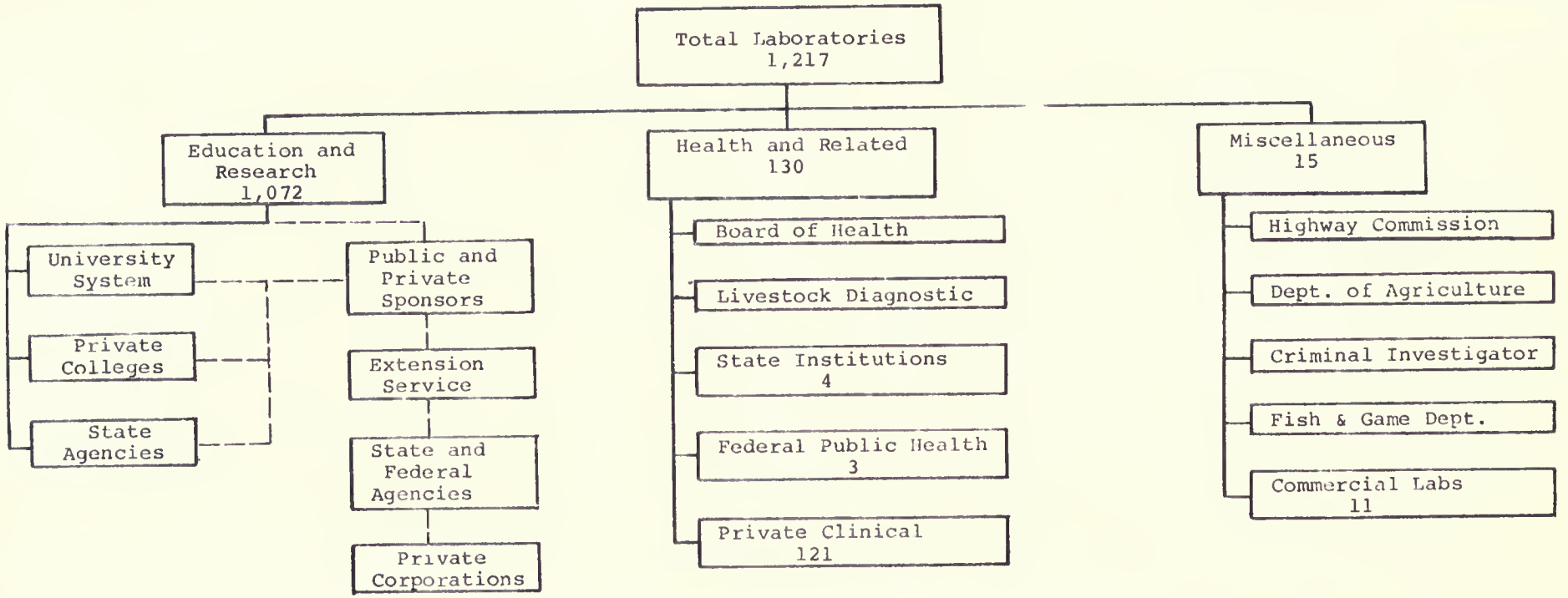


TABLE I

SUMMARY OF STATE LABORATORY OPERATIONS

Laboratory - Location	Area (Ft.²)	PERSONNEL: Full-Time Positions: Supervisors	Full-Time Positions: Professional	Full-Time Positions: Supporting or Clerical	Part-Time or Seasonal: Professional	Part-Time or Seasonal: Non-Professional	Part-Time or Seasonal: Consultants	WORK LOAD: No. of Samples Yearly	EQUIPMENT: Adequate for Current Needs	ANNUAL FUNDING (FY 1972): Total	State General	Federal-Private	Earmarked Revenue	EXPENDITURES BY OBJECT: Personal Services	Operations	Capital Outlay
Agriculture:																
1 Grain & Seed - Bozeman (MSU)	2,500	1[a]	0	1	3[a]	3 1/4	0	10,900	Yes			(No Departmental Breakdown)				
2 Feed & Fertilizer - Bozeman (MSU)	4,200	1	2	6	0	6	8[a]	14,883	No	$ 168,941	-	-	$ 169,941	$ 122,675	$ 37,116	$ 9,150
3 Diagnostic - Bozeman (Dept. of Livestock)	(12 rooms)	1	6	5	0	1	a	225,662	Yes	$ 152,741	$ 106,610	-	$ 46,131	$ 116,756	$ 32,300	$ 3,685
4 Soil Testing - Bozeman (MSU)	700	1[a]	0	3 1/4	1[a]	1	a	8,000	Yes	$ 19,150	$ 10,850	-	$ 8,300	$ 18,000	$ 1,150	-
5 Grain Inspection - Gt. Falls (Dept. of Agric.)	5,000	1	6	15	0	5 - 15	0	60,000	Yes	$ 150,000			$ 150,000	(No Departmental Breakdown)		
Swine & Wool Testing - Bozeman	No inventory conducted on these facilities.											(No Departmental Breakdown)				
Health:																
6 Boulder River Hospital - (Dept. of Institutions)	1,224	1	2	3	0	6	3[b]	30,000	No			(No Departmental Breakdown)				
7 Warm Springs Hospital - (Dept. of Institutions)	(4 rooms)	1	1	1	0	0	2[b]	45,600	No	$ 23,462	$ 23,462	-	-	$ 12,424	$ 7,251	$ 3,787
8 Galen State Hospital - (Dept. of Institutions)	1,800	1	1	2	0	0	2[b]	15,360	No			(No Departmental Breakdown)				
9 Laboratory Division - Dept. of Health, Helena	21,586	2	13	8	0	2	c	105,000	No	$ 159,067	$ 88,519	$ 70,548	-	$ 136,067	$ 23,000	-
Miscellaneous:																
0 Bureau of Mines - Butte	(6 rooms)	1	0	2[a]	0	4 3/4	a	(not reported)	No	$ 73,308[d]	$ 44,861	$ 28,447	d	$ 41,096	$ 23,631	$ 8,581
1 Fish & Game - Bozeman (MSU)	1-500	1	0	1/4	0	6 1/2	a	(not reported)	Yes	$ 29,000	$ 7,250	$ 21,750	-	$ 29,000	-	-
2 Criminal Investigation - Missoula (A.G.)	400	1	1	0	0	0	a	1,200[e]	Yes	$ 64,000	$ 64,000	$ -	-	(No Departmental Breakdown)		
3 Highway - Helena (highway dept.)	14,000[f]	1	10	38	0	60[f]	0	20,000	Yes	$1,327,106	-	$ 942,240	$ 384,866	$ 833,986	$386,758	$106,412

a Time allocations for supervisor and consulting staff cannot be accurately determined as laboratory has access to personnel and programs of the resident academic institution.

b Paid consultants are professional physicians who visit the institutions on a regular basis. Unpaid consultant services are occasionally supplied by medical students during summer seminars.

c Department of Health & Environmental Sciences Laboratory Advisory Council - members paid expenses and per diem only.

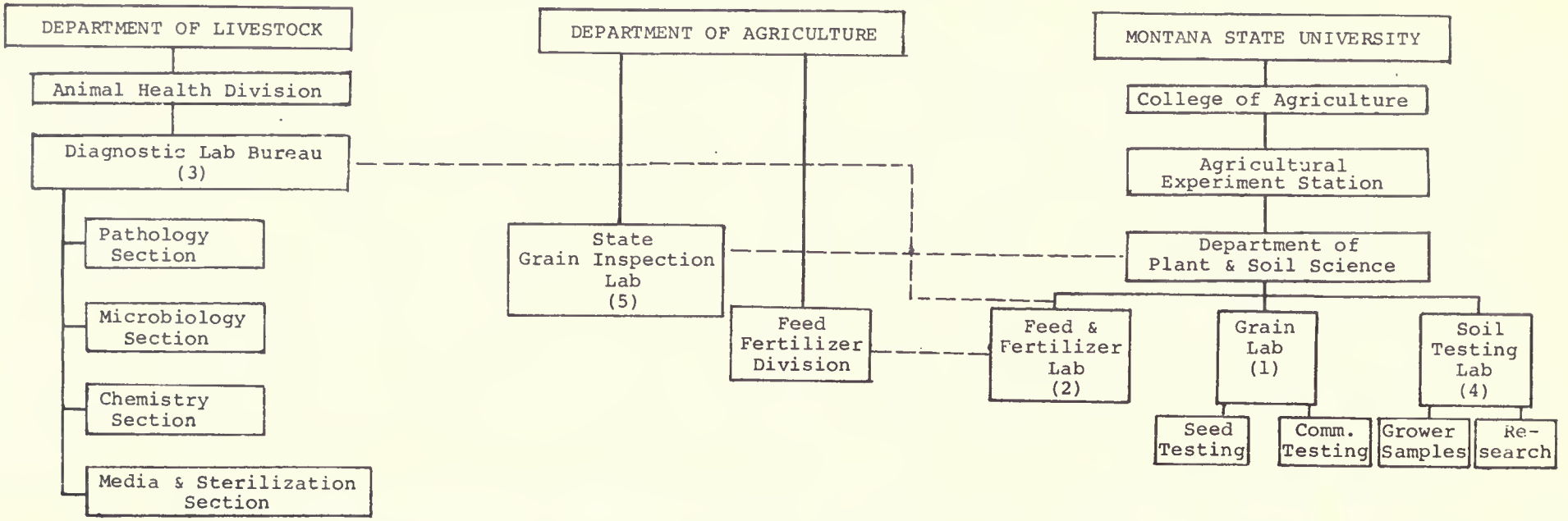
d Expenditures and earmarked revenue varies according to number of samples received.

e Tests are run at the Criminal Investigation Laboratory to determine the presence of any one of 144 controlled substances (drugs).

f The central Highway Testing Laboratory in Helena also administers eleven divisional testing laboratories each having floor space of approximately 1500 ft.².

FIGURE 2

AGRICULTURAL LABORATORIES ORGANIZATION CHARTS



AGRICULTURAL LABORATORIES

1. Grain Laboratory - Bozeman

The Montana Grain and Seed Laboratory, also known as the Grain Lab, is located on the Montana State University Campus. The lab is under the direction of the Department of Plant and Soil Science of the Agricultural Experiment Station. The head of the Department of Plant and Soil Science and supervisors of the Grain Lab share their time between administration and teaching duties within the MSU College of Agriculture.

As required by Section 46-208, R.C.M. 1947, the Grain Lab is responsible for testing seed to be sold in Montana, and for USDA grading and protein testing of commercial grains, mainly wheat and barley. This grading and testing function represents a relatively minor portion of the total lab work load, with only about 7,000 grain samples received annually.

Samples of seed and grain are sent to the Grain Lab primarily by commercial grain and seed growers and Department of Agriculture seed inspectors. Test results on seeds are reviewed by the lab supervisor and the data is submitted to the State Department of Agriculture as the chief regulatory agency. Results of grain grading and protein tests are reviewed by one of two USDA licensed inspectors and the reports are then forwarded to the submitting commercial grower. Fees are charged for grading and protein testing, and test results serve as a basis for the commercial marketing of the particular grain tested.

The grain lab is closely integrated with the College of Agriculture and the Agricultural Experiment Station. Fee schedules are determined by the Agricultural Experiment Station and the purchase of all supplies and equipment is handled through the MSU business office. The Grain Lab also shares equipment, space and personnel with the Department of Plant and Soil Science.

The Bozeman Grain Lab is unique in that it is the only lab in the United States doing serological tests for barley virus. This test was recently developed at MSU and has helped to reduce crop damage from barley virus throughout the country.

At the present time, field inspectors employed by the Department of Agriculture collect seed and grain samples at various locations around the state and mail them to the Bozeman Grain Laboratory. This is done in conjunction with the inspector's normal duties and at no charge to the Bozeman Grain Laboratory. The Bozeman lab has the statutory authority to employ samplers under Section 3-806, R.C.M. 1947, but has not found it necessary to do so as long as this informal arrangement has been in effect.

The Council finds that legislation is necessary to authorize the Department of Agriculture to contract to do sampling for the Bozeman Grain Laboratory and to receive reimbursement for any costs

incurred. Such legislation would formalize the procedure already in effect and reimburse the general fund operations of the Department of Agriculture with earmarked funds appropriated to the Bozeman Grain Laboratory. (Appendix A)

2. Feed and Fertilizer (Analytical) Laboratory

The Feed and Fertilizer Lab is also located on the Montana State University campus within the Agricultural Experiment Station organization; however, its activities are coordinated by the Administrator of the Feed and Fertilizer Division of the State Department of Agriculture.

The function of the Feed and Fertilizer Lab is to collect and interpret analytical data applicable to the use of agricultural products. The statutory responsibilities assigned to this lab are found in Sections 3-1718 and 3-2020, R.C.M. 1947. These laws direct the Department of Agriculture to insure that commercial feeds and fertilizers are properly labeled with accurate guarantees as to the contents and with adequate instructions for their use.

Official samples of feed and fertilizer are taken by two field samplers employed by the Department of Agriculture. Each sample requires a number of analytical tests as several tests must be run on each sample to determine that the numerous guarantees are met. In addition, if the first test does not meet specifications, the analysis is repeated one or more times.

Fees collected for commercial tests are deposited in the Earmarked Revenue Fund - Commercial Fertilizer Account, and expenditures are appropriated from this account. Fees collected are also received in the Helena office of the Department of Agriculture, as required by statute.

Some duplication was noted in the statutory responsibilities assigned the feed and fertilizer lab and those of the Laboratory Division of the Department of Health and Environmental Sciences. In the Montana Food, Drug and Cosmetic Act, under Section 27-702, R.C.M. 1947, the State Department of Health and Environmental Sciences is given the authority to regulate "food or drink for man or other animals." The testing of animal feeds within the Department of Health and Environmental Sciences, however, is done primarily in connection with investigations into human disease.

3. Department of Livestock Diagnostic Laboratory

The Department of Livestock Diagnostic Laboratory was established under the authority of Section 46-208(4), R.C.M. 1947, to provide livestock disease control and assurance of a safe meat and milk supply. This function is ancillary to the responsibilities of the Livestock Sanitary Board to advance the livestock industry in Montana while protecting public health. The Diagnostic Lab building

was constructed in 1960, following approval of construction by the legislature in Chapter 262, Laws of Montana, 1959. While located on the Montana State University campus, the lab is not supervised by either MSU or Agricultural Experiment Station personnel. The Diagnostic Lab is rather a division of the Livestock Sanitary Board and is under the control of that agency.

The Diagnostic Laboratory is responsible for diagnosis of diseases in cattle, horses, sheep, swine and poultry. Rabies tests are conducted by the laboratory, which also considers methods of disease prevention and control. Other tests conducted include bacteriological and chemical analyses of meat, meat-food products, milk and milk products collected by employees of the Dairy and Milk Division and Meat Inspection Division of the Livestock Sanitary Board.

Aside from samples of material collected by other divisions of the agency, the Diagnostic Lab receives samples from veterinarians, farm groups, and any citizen of the state. Private citizens requesting analyses are encouraged to send samples through an authorized state veterinarian.

Funding for the Diagnostic Lab comes from the state general fund and from a special tax levy on livestock. The historic and anticipated use of these funds is shown below:

TABLE 2

SANITARY BOARD DIAGNOSTIC LABORATORY
Summary of Program Expenditures and Funding
Fiscal Years 1968 through 1971 & 1973 Biennial Appropriation

	EXPENDED				APPROPRIATED	
FISCAL YEAR	1968	1969	1970	1971	1972	1973
EMPLOYEES FULL-TIME EQUIVALENT	12.00	12.40	12.21	12.21	13.00	13.00
Personal Services	$ 85,695	$ 92,862	$ 93,246	$106,204	$116,756	$121,989
Operation	24,769	27,482	27,804	32,223	32,300	33,850
Capital	3,390	1,903	7,816	5,220	3,685	1,125
Total Program	$113,854	$122,247	$128,866	$143,647	$152,741	$156,964
FUNDING DETAIL:						
General Fund	$ 70,170	$ 80,373	$ 58,611	$ 67,204	$ 92,741	$120,479
Earmarked Revenue Fund:						
Livestock Sanitary Board Account	43,684	41,874	70,255	76,443	60,000	36,485
Total Funding	$113,854	$122,247	$128,866	$143,647	$152,741	$156,964

As can be seen, reliance on the state general fund decreased from 1969 through 1971; however, funding from this source is expected to increase markedly during the 1973 biennium.

Revenue to the Livestock Sanitary Board Earmarked Revenue Fund comes from a personal property tax on livestock authorized in Section 84-5211, R.C.M. 1947. This levy is 1-1/2 mills on the assessed value of all livestock (4-1/2 mills on the taxable value of all livestock). The purposes for which this fund may be used include payment of indemnity for animals slaughtered, expenses in investigating and suppressing diseases, and quarantine expenses, in addition to expenses for maintenance of the Diagnostic Laboratory.

The mill levy is assessed annually against the value of various classifications and grades of cattle, sheep and swine. The Diagnostic Lab, however, conducts tests on approximately 43 different species of animals, including poultry, horses, dogs and cats. Most of these animals are received from veterinarians and citizens for the purpose of autopsy and other tests. No fees are charged by the Diagnostic Lab for these investigations. For example, of the 953 autopsies performed at the Diagnostic lab during fiscal 1971, only 592, or 62% were of animals covered by the Livestock Sanitary Board mill levy. In light of the increasing burden being placed upon the state general fund in support of Diagnostic Lab operations, the Council feels that a selective fee should be imposed upon persons utilizing the services of the laboratory for purposes other than those contemplated in the legislation authorizing the Livestock Sanitary Board mill levy.

The Legislative Council recommends that the Livestock Sanitary Board impose a selective fee for tests performed by the Diagnostic Laboratory on animals not subject to tax assessment as commercial livestock.

4. Soil Testing Laboratory

The Soil Testing Laboratory is a division of the Plant and Soil Science Department of the Montana Agricultural Experiment Station located on the Montana State University campus. The head of the Department of Plant and Soil Science shares the administrative responsibility for the Soil Testing Lab with his teaching assignments at the College of Agriculture. This is also the case with the two professional supervisors of the lab.

The function of the Soil Testing Lab is to provide chemical analysis of soils and irrigation water. Materials for testing are submitted for analysis by farmers and ranchers and by county agents and fertilizer dealers acting on behalf of farmers.

The Soil lab conducts the following routine analyses:

Water: Analysis of irrigation water quality, dissolved solid content, salinity, sodium hazard.

Soil: Analysis for available nutrients and information as to best soil additives for particular plant growth.

Plants: Analysis for inorganic content to detect deficiencies.

The Soil Lab is funded primarily through Agricultural Experiment Station Funds. State general fund support of the Soil Lab averages $10,500 annually.

5. Montana State Grain Inspection Laboratory

The Montana State Grain Inspection Laboratory, located in Great Falls, is the official state agency for determining the quality of grain. This determination, following USDA guidelines, is done to provide a basis for settlement between commercial buyers and sellers. The weighing department is responsible for supervising the weighing of carloads of grain being loaded or unloaded at grain terminals at Great Falls, Harlowton, Lewistown and Shelby. Official weights are issued which are used in settling loss claims of the elevators against the railroads as well as providing a record of grain marketed. Until 1969, a state grain laboratory was also located in Harlowton, but this lab was closed due to insufficient operating income. County protein testing laboratories are also authorized by Sections 3-504 through 3-511, R.C.M. 1947; however, such labs are non-existent at the present time.

Samples of grain are taken by a sampling crew assigned to the inspection points noted above. Samples are taken and sent to the central Great Falls lab, where they are graded by grain inspectors. As the grain is graded, moisture, dockage and sedimentation value are determined. Junior chemists at the Great Falls lab test the grain for protein content in accord with USDA standards and as required by Sections 3-205, 3-209 and 3-210, R.C.M. 1947. Mustard seed is also graded at the Great Falls lab to enforce the provisions of Title 3, Chapter 19, R.C.M. 1947.

As noted in the discussion of the Bozeman Grain Lab, USDA licensed inspectors and assistant inspectors are also on the staff of the Agricultural Experiment Station and conduct grading and protein tests. However, the Bozeman facility is not under the supervision of the Department of Agriculture as is the Montana State Grain Inspection Lab at Great Falls. The various grain tests are identical, however, and could be consolidated at one location. The location best suited for centralized testing would be Great Falls, as this city is located at the center of the grain-shipping area as well as the grain-growing belt of the state.

The Bozeman Grain Lab is primarily concerned with the testing of grain seed for germination and purity. Only about 7,000 samples of wheat and barley are submitted to the Bozeman lab annually for protein testing and USDA grading, as opposed to 47,000 samples submitted to the Great Falls lab.

TABLE 3

SEED TESTING FEES CHARGED BY SELECTED WESTERN STATES

Purity and Germination

State	Alfalfa, Clovers Cereals, Flax	Wheatgrasses Brome, Fescues	Redtop, Bentgrass Bluegrasses	Tetrazolium	Noxious Exam.
California	$11.00 - $17.75	$14.75 - $26.75	$27.75 - $34.00	$4.75	$4.75
Colorado	$3.50	$ 4.75 - $ 7.25	$7.50		
Idaho	$5.00	$6.50	Based on time @ $4.00/hr.	-	$2.00
Iowa	$5.50	$ 6.00 - $ 9.00	$ 6.50 - $ 9.00	$6.00	$2.00 & up
Kansas	$3.50	$5.00	$5.00		
Minnesota	$1.75	$2.25	$3.75		
MONTANA	$2.00	$3.00	$4.00	$6.00	$1.50
Nebraska	$5.00	$ 7.00 - $ 8.00	$8.00	$5.00	$2.00
Nevada	$4.00	$5.00	$6.00	-	$2.50
New Mexico	$2.50	$2.50	$5.00		
North Dakota	$3.00	$4.00	$4.50		$1.00
Oklahoma	$2.50	$2.50	$2.50		$2.00
Oregon	$9.50	$11.75	$15.25	$9.00 - $14.00	$5.50
Texas	$2.50	$2.50	$5.00		
South Dakota	$5.00	$7.00	$7.00	$7.00	$3.00
Utah	$4.50	$6.50	$8.00	$7.50	Hourly Rate
Washington	$7.00	$8.00	$11.00		$2.00 - $3.00
Wyoming	$3.50	$5.00	$5.00		$1.00
AVERAGE	$4.68 (18)	$6.29	$7.42	$6.88	$2.48

Although private flour mills in Montana maintain their own laboratories to determine grade and protein content of grain, these laboratories are not licensed by the Department of Agriculture. No commercial laboratories equipped to perform these tests now operate in Montana.

The Legislative Council recommends that Montana law requiring grain protein testing and USDA grading at the Bozeman Grain Lab be amended so as to make the Montana State Grain Inspection Laboratory the only official laboratory authorized to perform these functions. (Appendix A)

Agricultural Testing Fees

With the exception of the Livestock Diagnostic Laboratory, all agricultural testing laboratories charge fees for their services to private citizens who request such services. A comparison of fees charged for one such service, seed quality testing, in Montana and other western states is shown on Table 3 on preceding page.

It would appear that Montana is not receiving fees commensurate with those charged by other states for similar services. No doubt the depth of analysis is greater in some other states, such as California; however, even with California removed from the comparison, western state average charges for the various seed quality tests are about double those charged in Montana.

It was the Council's opinion that all agricultural fees should be reviewed for their adequacy in light of increasing laboratory operating costs. Such cost reviews should be made periodically in the future to insure that state general fund moneys are not being used to support commercial or private laboratory activities.

The Legislative Council recommends that laboratory administrators in the Department of Agriculture and the Agricultural Experiment Station conduct a detailed review of the operating expenses of each laboratory under their control and make adjustments to laboratory fee schedules where necessary to make such fees reflective of all direct and indirect costs incurred in providing the services for which each fee is charged.

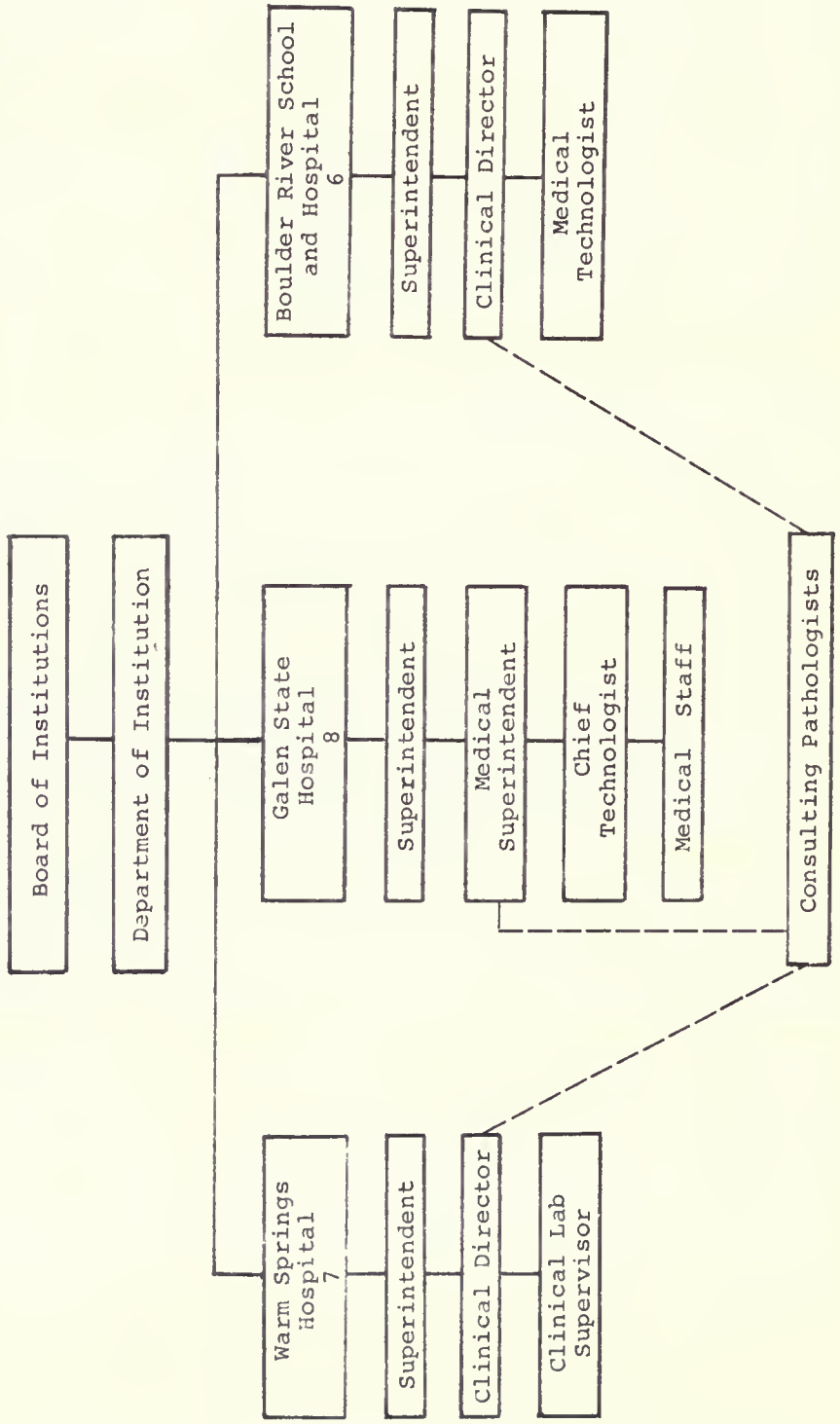
HEALTH LABORATORIES

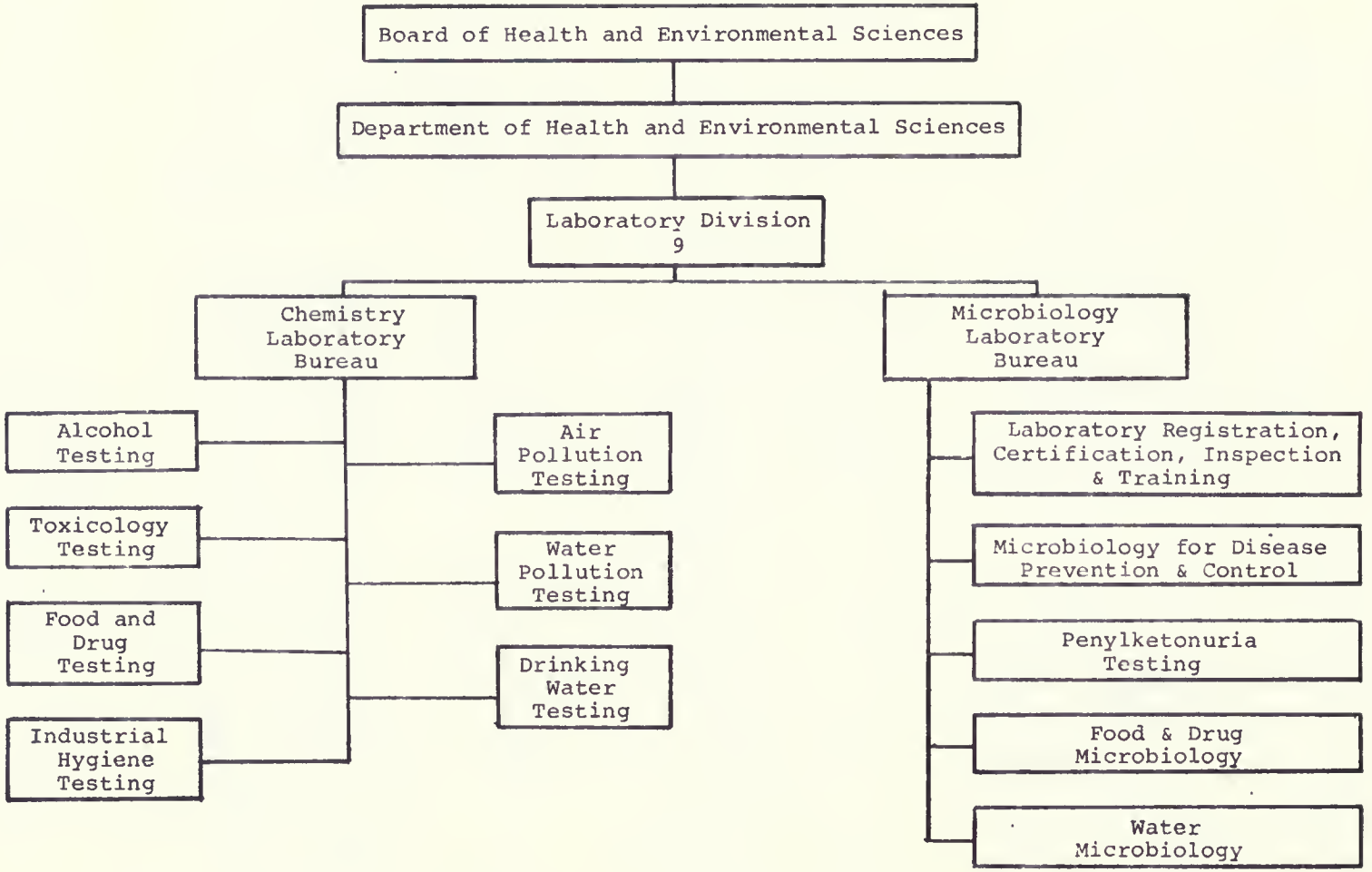
6, 7, 8. Institutional Health Laboratories

The three institutional health laboratories, located at the Boulder River, Galen and Warm Springs hospitals, perform similar clinical services in support of medical care to the patients in residence at the respective state institutions. These clinical laboratories

FIGURE 3

HEALTH LABORATORIES ORGANIZATION CHART




Board of Health and Environmental Sciences
Department of Health and Environmental Sciences
Laboratory Division 9
Chemistry Laboratory Bureau
Microbiology Laboratory Bureau
Alcohol Testing
Toxicology Testing
Food and Drug Testing
Industrial Hygiene Testing
Air Pollution Testing
Water Pollution Testing
Drinking Water Testing
Laboratory Registration, Certification, Inspection & Training
Microbiology for Disease Prevention & Control
Penylketonuria Testing
Food & Drug Microbiology
Water Microbiology

run tests on samples of body fluids (blood, urine, etc.) in order to supply information to private and staff physicians who care for the patients. The space requirements and work loads of each institutional lab vary with the populations of their institutions, as can be seen on Table 1.

The Boulder Hospital lab is somewhat unique in that the morbidity and mortality rate of retarded persons sufficiently ill to be hospitalized is significantly higher than that of the general population. For example, epileptic patients who are ill in the general population have three or four times the mortality rate of the general population. Those who are institutionalized with mental retardation, however, have seventeen times the mortality rate. Because of the higher risk of complications from disease, the tests run at the Boulder clinical lab generally require more immediate attention than similar tests at the Warm Springs and Galen institutions.

The Warm Springs State Hospital and the Galen State Hospital are located in southwestern Montana about five miles apart. The Warm Springs State Hospital, created in 1913, is charged with the responsibility to provide care and treatment to the mentally ill residents of Montana. The hospital also operates a specialized unit dedicated to alcoholism rehabilitation service. Galen State Hospital, created in 1911, is provided for in Sections 80-1701 through 80-1704, R.C.M. 1947. This institution is primarily responsible for the treatment of tuberculosis and silicosis; however, the hospital also treats patients with other chronic respiratory diseases as space and funds permit.

It was the Council's opinion that all institutional laboratories were inadequately staffed and equipped. This opinion is also held by physicians and other professional consultants serving these institutions. Dr. Newman, consulting pathologist for the Warm Springs Hospital, has stated that the Warm Springs clinical lab is "woefully deficient in modern clinical equipment needed to deliver health care to the patients at Warm Springs."

As noted previously, the Warm Springs and Galen institutions are located within five miles of each other, along Interstate Highway 90. With this proximity, it is possible that some routine laboratory testing functions of the two labs could be consolidated. Furthermore, a consolidated arrangement could facilitate joint programs such as personnel and equipment sharing. If physical consolidation is deemed unfeasible, then methods of combining hiring and equipment purchases between the two labs should be actively pursued.

The Legislative Council recommends that the Department of Institutions investigate means of consolidating clinical laboratory functions between the Galen and Warm Springs Hospitals and submit their findings to the 43rd Montana Legislative Assembly.

The analyses of both the Galen and Warm Springs clinical laboratories revealed that neither of these facilities currently utilize federal programs within their respective operations. The Council was advised of several Department of Health, Education and Welfare programs which offer cash grants and advisory services to upgrade public health laboratory proficiency. The typical laboratory technician, however, has neither the time nor the ability to actively seek federal grants.

In discussing this problem with the Montana Federal-State Coordinator, it was pointed out that the Coordinator's office, having a staff of two, must rely on the administrators of the various state agencies to acquaint themselves with the provisions of federal programs applicable to their particular operations. The head of the Department of Institutions has assured the Council that, in the future, he and the various institution administrators will work more closely with the office of the Federal-State Coordinator to examine federal programs which support state public health laboratories.

9. Laboratory Division - State Department of Health and Environmental Sciences

The Laboratory Division of the recently reorganized Department of Health and Environmental Sciences is located in the east wing of the Cogswell Building within the State Capitol Complex. In addition to the central lab, the Division supervises two branch laboratories at Kalispell and Billings. The Division's Chemistry Lab Bureau operates two mobile labs for testing water and air quality in the field.

The operations of the Laboratory Division consist of specialized testing, support of public health activities, certification of local health laboratories, and developmental research.

Specialized testing includes such activities as virus diagnosis, tuberculosis bacteriology, fluorescent antibody absorption testing for syphilis, and salmonella sterotyping. Materials for testing (blood, urine, tissues) are sent to the Laboratory Division from physicians and other private and public health laboratories where such reference work is beyond the submitter's area of competence. Many specialized tests require unique procedures and equipment which are not used enough to justify their expense at the local level.

The Laboratory Division supports activities of other public health labs in the control of communicable diseases and activities in environmental sanitation such as microbiological control of drinking water supplies, studies of air and water pollution, and investigation of outbreaks of disease caused by ingestion of contaminated food. The Division also assists the Hospital and Medical Facilities Division of the Department of Health and Environmental Sciences with their inspection program as it concerns laboratory facilities. Samples of water, soil, and air are sent to the lab

by sanitarians, law enforcement officials and private citizens.

In fulfilling its statutory responsibilities to certify private laboratories and lab personnel for participation in Medicare programs, officials of the Laboratory Division visit laboratories for inspection and consultation. The Division also conducts proficiency testing programs and lectures at professional meetings.

The goal of the Laboratory Division's research and development activity is to shorten the latent period from basic research to practical application of proven laboratory techniques. An example of a current program in this area is throat-culturing for streptococci as a means to eradicate rheumatic fever which causes rheumatic heart disease.

The work load of the Laboratory Division fluctuates seasonally in that water sampling activity increases 50% during the summer months. Disease control has similar cyclinical activity as venereal disease is most active in the early fall, strep throat in early fall and spring, and serology tests for marriage increase in May, June and December.

The Chemistry Bureau of the Laboratory Division analyzes about 5,000 samples annually in conducting inorganic testing of air and water for pollution, qualitative tests for illegal drugs and barbituates, and a limited examination of pesticides. The Microbiology Bureau handles about 100,000 samples annually in the areas of disease control, phenylketonuria testing, and water or food microbiology. The bureau chiefs review all test results before returning them to submitter's. Highly specialized tests are referred to out-of-state federal labs such as the Atomic Energy Commission lab in Nevada, the Disease Control Center in Atlanta, the Food and Drug Lab in Denver or the Occupational Health Lab in Salt Lake City.

After reviewing the operations of the Laboratory Division of the Department of Health and Environmental Sciences, the Council concluded that the Laboratory Division could and should be physically separated from the other administrative programs of the Department. In the Council's opinion, a more suitable location for the Department's laboratory activities would be on the campus of one of the units of the Montana University System. The Council does not, however, contemplate any change in organizational structure, as control over laboratory operations should continue to be vested in the Board of Health and its administrative officers under the proposed relocation.

The major benefits of relocating the Laboratory Division on a university campus are as follows:

1. The scientific community is experiencing a significant increase in the importance of organic analysis as it concerns public health laboratory work. The Laboratory Division presently has equipment for running organic analysis on drugs and alcohol; however, the fiscal effort given

this program is minimal and may require major expenditure in the future. Modern organic analysis equipment is available within the university system, as are professionals competent to interpret test results.

2. A central laboratory equipped for organic analysis could be made available to other state agencies who could utilize this laboratory in lieu of expanding their own operations.

3. While pollution control programs have been in existence for many years, this activity is becoming of much greater importance to the public each year. Adequate pollution control requires the supporting services of a versatile laboratory capable of meeting rapid changes in technology and pollution identification. For the state to respond to these changes may require significant expenditures for services and equipment. It is possible that some of these expenditures may be duplicated at the university level.

4. The State of Montana does not presently have a medical school. By locating the Laboratory Division on a university campus, the lab can provide a substitute organization for the rapid dissemination of new methods and research findings into practical application in Montana. While the location of the Laboratory Division in Helena does not prevent this type of activity, research and development programs have not been a departmental priority in the past.

5. Much of the activity of the Laboratory Division, especially the Microbiology Bureau, is directed toward clinical assay work. Many of the routine tests run could be contracted to private labs or accomplished more economically using new computerized testing methods now being studied at several units of the university system. This would free the personnel of the Laboratory Division to concentrate their efforts on areas of overall public health and on reference work. Once again, this sort of program would require a well-equipped and versatile laboratory, along with a library and expertise in supporting areas that can be quickly consulted.

6. The present curriculum offered at Montana's major universities is deficient in pre-medical courses required to meet the state's student exchange obligations to the WICHE regional compact. The proposed relocation of the Laboratory Division may allow the host university to give a higher

priority to pre-medical and related courses requiring access to a clinical laboratory.

The head of the Department of Health and Environmental Sciences, as well as his Laboratory and Environmental Sciences Division administrators, have testified before the Council that, in their opinion, a relocation of the Laboratory Division would greatly impair the effectiveness of the entire department. The administrators felt that interchange between laboratory technicians and related enforcement or regulatory officers is crucial to the discharge of their statutory responsibilities. This "team" approach would be severely hampered if the Laboratory Division was located in a city other than Helena. Other arguments made against the proposed arrangement include:

1. The Department has made plans to correct deficiencies in organic analysis. A federal grant was obtained to provide a program of breath-alcohol analysis required under the implied consent law. A grant application is currently being processed to fund analysis for pesticide residues. Other equipment will be obtained for organic analysis as its purchase is justified by anticipated use. The need for some such equipment is minimized through the Department's ability to refer analyses to federal laboratories at no charge to the state.

2. The versatility required for environmental control laboratory support is being acquired as rapidly as financing allows. The Department questions whether Montana universities are in a position to furnish services required without added expense.

3. Universities specialize in basic rather than applied sciences. Much information on specialized procedures using atomic absorption and gas chromatography comes from companies making these instruments. Some valuable information is provided by universities, but this is usually in published form and readily available in Helena.

4. The Laboratory Division is merely ancillary to the administrative decision-making process and is not a line function. The case for placing the lab function apart from enforcement would better apply to the Crime Control Laboratory, where test results should be available to defense and prosecution alike. The law enforcement activity of the Department of Health and Environmental Sciences is not this direct, as the Department serves as a quasi-judicial body and conducts hearings of its own.

5. The Department of Health and Environmental Sciences presently employs laboratory technicians and other

supervisors who have had extensive training in public health work and who possess a great deal of expertise in laboratory work. If the Laboratory Division were to be relocated, some of these professionals may resign their positions.

The basic questions surrounding the proposal appear to be:

1. Should laboratory analytical services be separate and apart from the regulatory and enforcement officials who must act on the basis of information generated in the laboratory?

2. Does the Montana University System possess the expertise and other resources required to complement the goals and objectives of the Laboratory Division of the Department of Health and Environmental Sciences?

3. If one answers questions 1 and 2 in the affirmative, would the benefits of the arrangement outweigh the loss of inter-agency communication inherent in isolating one division of a state department?

After having examined evidence presented both for and against the proposal, the Council concludes that the placement of the Laboratory Division of the Department of Health and Environmental Sciences in a university setting is the better long-term solution to providing versatile, efficient support to medical and health-oriented state activities. The Council respects the concern of department administrators as to possible short-run disadvantages of the relocation on other department programs; however, it is the Council's opinion that the arrangement will eventually afford the department more flexibility and efficiency in fulfilling their statutory responsibilities.

The Legislative Council recommends that the Laboratory Division of the Department of Health and Environmental Sciences be relocated on the campus of one of the units of the Montana University System.

That if such a relocation is effected, the Criminal Investigation Laboratory be integrated into any new facility acquired to house the Laboratory Division.

MISCELLANEOUS STATE AGENCY LABORATORIES

10. Materials Testing Division - State Highway Department

The Materials Testing Division of the State Highway Department is the largest state-operated laboratory, both in terms of physical

space occupied and size of personnel. The central testing lab is located in the east wing of the Cogswell Building in the State Capitol Complex; however, the central lab administers 85 mobile laboratory units which are assigned to active state highway construction projects.

The Materials Testing Division employs 76 persons and is responsible for the inspection and detailed physical testing of all materials used in highway construction. The lab receives and tests samples of such items as paint, asphalt, gasoline, cement, wood, and metal. The division must certify to the Bureau of Public Roads upon the completion of each project that the materials used in that project meet the specifications of the contract and of various state and federal standards. The core-drilling section of the division consists of geologists and engineers who take samples of soil, subsoil and rock formations in order to determine material available for construction. This core-drilling information aids designers in locating a highway according to water movement, foundation material and rock formations.

In addition to supporting the Highway Department's construction program, the laboratory is also utilized by the Pre-Construction and Maintenance programs.

11. Analytical Laboratory Division - Montana Bureau of Mines and Geology

The Bureau of Mines laboratory is operated in conjunction with the Montana College of Mineral Science & Technology and is located on that university's campus in Butte. One of this laboratory's state functions is the analysis of coal mined in Montana to determine its taxable BTU rating. Samples of commercially-mined coal are sent for analysis by various strip mine operators and fees are charged based on the approximate costs of testing. The Bureau of Mines and Geology laboratory is the only state lab set up to run geochemical tests on coal. In addition to coal testing, the Bureau lab also conducts geochemical tests on soil and water to determine their mineral content.

12. Fish and Wildlife Laboratory - Bozeman

This laboratory is located in the Fish and Game Building on the Montana State University campus. Organizationally, the lab is under the Wildlife Management Division of the State Department of Fish and Game. The function of the Fish and Wildlife Laboratory is to perform post-mortem examinations on fish and wildlife to determine their feeding habits and main grazing habitats. The lab utilizes the facilities of the Department of Livestock Diagnostic Laboratory located nearby in conducting post-mortems of large wildlife species. Fish and Game Department personnel utilize the data supplied by the Fish and Wildlife Lab in combination with other data in making decisions and recommendations concerning management of particular species.

13. Criminal Investigation Laboratory - Missoula

The Criminal Investigation Laboratory, also known as the State Crime Laboratory, is a part of the Criminal Investigation Division of the Department of Law Enforcement and Public Safety under the supervision of the Attorney General. The lab analyzes drug samples submitted by federal, state and local law enforcement agencies to determine the presence of one or more of 144 controlled substances (i.e. marijuana, heroin, amphetamines, etc.). Tests requiring organic analysis are conducted on the University of Montana campus utilizing the staff and equipment of the university's chemistry and pharmacy departments.

Test results are confidential and are made available only to the submitting law enforcement agency. Summaries of test results are also made available to the State Attorney General. Enforcement officials use the test results to make decisions as to whether or not a drug offense has been committed.

APPENDIX A

_____BILL NO._____

INTRODUCED BY_____

3-806

A BILL FOR AN ACT ENTITLED: "AN ACT TO AMEND SECTION 3-806, R.C.M. 1947, TO ALLOW THE MONTANA GRAIN INSPECTION LABORATORY, BOZEMAN, TO CONTRACT WITH THE DEPARTMENT OF AGRICULTURE TO COLLECT SEED SAMPLES FOR ANALYSIS."

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF THE STATE OF MONTANA:

Section 1. Section 3-806, R.C.M. 1947, is amended to read as follows:

"3-806. Employment and payment of inspection agents. The director of the Montana grain inspection laboratory, under the direction of the director of the Montana agricultural experiment station, may employ, or contract with the department of agriculture ~~such-agents-as-are-deemed-necessary~~ to each year inspect, sample and make analysis of any agricultural seed on sale in the state for seeding purposes within the state, and the ~~salaries-and~~ necessary expenses of employing or contracting for such agents, together with the cost of publishing the findings of such inspections and analyses, shall be paid out of moneys appropriated for the Montana grain inspection laboratory, of the Montana agricultural experiment station."

APPENDIX B

_____BILL NO._____

INTRODUCED BY_____

3-512

A BILL FOR AN ACT ENTITLED: "AN ACT AMENDING SECTION 3-512, R.C.M. 1947, REGARDING PROTEIN TESTS OF ALL WHEAT DELIVERED TO GRAIN WAREHOUSEMEN--MANNER OF MAKING TEST--RESULT--FEE."

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF THE STATE OF MONTANA:

Section 1. Section 3-512, R.C.M. 1947, is amended to read as follows:

"3-512. Protein test to be made of all wheat delivered grain warehousemen--manner of making test--result--fee. Each public grain warehouseman as defined by the laws of the state shall take a sample from each load of wheat delivered to his warehouse and preserve such sample in an air-tight container with the owner's name thereon. As hauling is completed by each owner the several samples taken from all the loads of any one owner shall be mixed thoroughly together, except that high, medium, or low protein wheat from the same owner or wheat of different types, varieties or grades shall be segregated and separate containers provided for each. A one-pint portion of the composite sample shall be submitted to the state grain laboratory at Great Falls~~, Harlowton, or Bozeman~~ and the balance shall be held in the owner's container. In the event of dissatisfaction on the part of warehousemen or owner either party shall have the right to a final appeal to the state laboratory.

In case of an appeal a one-pint portion of the remainder of the owner's sample shall again be submitted to the state laboratory with a statement of facts of the appeal and a final test in duplicate shall be made by the laboratory. The certificate of the state laboratory of such test shall be final and binding upon both parties in establishing the basis of the price paid by the warehouseman. A fee ~~of fifty cents ($0.50) for~~ commensurate with the cost of each protein test ~~may~~ shall be made, to be deducted and paid at the time of final settlement; provided, however, upon written request of owner, no protein test need be made upon said owner's wheat."